

EXHIBIT 82

Declaration of Joseph DeSimone

**IN THE UNITED STATES DISTRICT COURT
FOR THE MIDDLE DISTRICT OF NORTH CAROLINA
CASE NO. 1:14-CV-954**

**STUDENTS FOR FAIR
ADMISSIONS, INC.,**

Plaintiff,

v.

**UNIVERSITY OF NORTH
CAROLINA et al.,**

Defendants.

DECLARATION OF JOSEPH DESIMONE

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I, Joseph DeSimone, hereby make this declaration from my personal knowledge and, if called to testify to these facts, could and would do so competently:

Education and Scholarship

1. I earned a Bachelor of Science in Chemistry from Ursinus College in Collegeville, Pennsylvania, in 1986 and a Ph.D. in Chemistry from Virginia Polytechnic Institute and State University in 1990.

2. From 1990 to 1995, I served as an Assistant Professor of Chemistry at The University of North Carolina at Chapel Hill ("UNC-CH"). I was promoted to Associate Professor of Chemistry at UNC-CH in 1995, when I was named the Mary Ann Smith Associate Professor of Chemistry, and I became a full professor the following year. In 2008, I was named the Chancellor's Eminent Professor of Chemistry at UNC-CH.

3. I also served as a member of the faculty at North Carolina State University from 1995 to 2008. I was named the William R. Kenan, Jr. Distinguished Professor of Chemical Engineering in 1999.

4. In 2010, I became an adjunct member of the faculty at the Memorial Sloan Kettering Cancer Center and the Sloan-Kettering Institute for Cancer Research in New York, New York.

5. In addition to my work as a professor, I served as the Founding Director of the UNC-CH Institute for Advanced Materials, Nanoscience, and Technology from 2003 to 2012; as the Director of the Kenan Institute of Private Enterprise from 2012 to 2013; and as the co-Principal Investigator of the Carolina Center of Cancer Nanotechnology Excellence from 2005 to 2015. In addition, I recently served as the Founding Director of the UNC-CH Institute for

Nanomedicine and as a member of the faculties of the Lineberger Comprehensive Cancer Center and the Department of Pharmacology at The University of North Carolina School of Medicine.

6. I have published more than 300 scientific articles during my academic career.

7. I am a member of the American Academy of Arts and Sciences, the National Academy of Engineering, the National Academy of Sciences, and the National Academy of Medicine. Fewer than 20 people are members of all three National Academies.

8. I am currently on sabbatical from UNC-CH to serve as Chief Executive Officer at Carbon3D, a company I co-founded in 2014.

Inventions and Entrepreneurship

9. I hold more than 150 patents and have more than 200 patents pending.

10. In 2002, two other scientists and I commercialized a stent (*i.e.*, a device that can be inserted into a blood vessel or an artery to prevent or alleviate a blockage) that slowly releases a medication into the bloodstream as it dissolves. In more technical terms, we commercialized a “fully bioabsorbable drug-eluting stent.” Our company, Bioabsorbable Vascular Solutions, was acquired by larger companies, and the technology was sold to Abbott Laboratories. After a series of international clinical trials, the stent is now used worldwide.

11. In 2004, I developed an environmentally friendly manufacturing process for creating high-performance plastics, such as Teflon.

12. Much of my research has focused on using technologies from the semiconductor industry to create effective, economical vaccines and medicines. In 2004, my research group and I developed a technology called Particle Replication in Non-wetting Templates (“PRINT”). We are using PRINT to learn more about the delivery of drugs and vaccines using different dosage

forms. My laboratory and the PRINT technology were instrumental in the founding of the Carolina Center for Cancer Nanotechnology Excellence funded by the National Cancer Institute.

13. Also in 2004, I launched Liquidia Technologies ("Liquidia"). Liquidia employs approximately 50 people in North Carolina's Research Triangle Park. It has raised more than \$60 million in venture financing, including the first-ever equity investment by the Bill and Melinda Gates Foundation in a for-profit biotechnology company. Liquidia has used the PRINT technology to create a seasonal influenza vaccine and recently brought the vaccine into clinical trials.

14. In 2014, I co-founded Carbon, Inc., which is located in Silicon Valley, California. The company's work is based on a breakthrough in 3D printing technology, Continuous Liquid Interface Production, that allows printing 100 times faster than other technology and makes materials far stronger. We have raised more than \$220 million for the venture and employ more than 200 people. Collaboration with world-class manufacturing companies and service bureaus has enabled Carbon to deliver final quality parts for customers in industries as varied as automotive, medical, apparel, and consumer electronics. Carbon's customers include BMW Group, Delphi Automotive, and Ford Motor Company.

Selected Honors and Awards

15. I have received more than 50 significant professional awards and recognitions.

16. In 2016, the President of the United States awarded me the National Medal of Technology and Innovation. The National Medal of Technology and Innovation was created by statute in 1980 and is administered for the White House by the U.S. Department of Commerce's Patent and Trademark Office. The award recognizes those who have made lasting contributions to America's competitiveness and quality of life and have helped strengthen the Nation's

technological workforce. This medal is the highest honor in the United States for achievement and leadership in advancing technological progress. I was awarded the honor “[f]or pioneering innovations in material science that led to the development of technologies in diverse fields from manufacturing to medicine; and for innovative and inclusive leadership in higher education and entrepreneurship.”

17. Other significant awards and recognitions I have received include the 2015 Dickson Prize from Carnegie Mellon University; the 2014 Industrial Research Institute Medal; the 2014 Kathryn C. Hach Award for Entrepreneurial Success; the 2013 Fellow of the National Academy of Inventors; the 2012 Walston Chubb Award for Innovation presented by Sigma Xi; the 2010 AAAS Mentor Award in recognition of my efforts to advance diversity in the chemistry Ph.D. workforce; the 2009 NIH Director’s Pioneer Award; the 2009 North Carolina Award, which is the highest honor the State of North Carolina can bestow to recognize notable achievements of North Carolinians in the fields of Literature, Science, the Fine Arts and Public Service; the 2008 Lemelson-MIT Prize for Invention and Innovation; the 2008 Tar Heel of the Year by the Raleigh News & Observer; the 2007 Collaboration Success Award from the Council for Chemical Research; the 2005 ACS Award for Creative Invention; the 2002 John Scott Award presented by the City Trusts, Philadelphia, given to “the most deserving” men and women whose inventions have contributed in some outstanding way to the “comfort, welfare, and happiness” of mankind; the 2002 Engineering Excellence Award by DuPont; the 2002 Wallace H. Carothers Award from the Delaware Section of the ACS; and the 2000 Oliver Max Gardner Award from The University of North Carolina, given to that person, who in the opinion of the Board of Governors’ Committee, “during the current scholastic year, has made the greatest contribution to the welfare of the human race.”

Diversity Is Central To Learning And Innovation

18. My work as a scientist and as an entrepreneur has taught me that diversity is central to innovation. Nothing is more impactful than a diverse set of individuals driving toward a common goal to make a difference.

19. New, innovative ideas are just simple connections between existing ideas, but we are exponentially more likely to make those connections in an environment that values diversity and fosters the expression of divergent points of view.

20. I observed at the beginning of my career that homogeneity creates subtle barriers to engagement, making it difficult for an outsider to break into the conversation. It thereby supports insularity, which can quickly lead to “groupthink.” Groupthink thwarts creative problem-solving.

21. For instance, early in my career, I was invited to an innovation group. Not only was it all White men around the table but they all had graduated from the same two research groups. Everyone knew each other and everyone already knew what each other knew. It dawned on me that this group was at a structural disadvantage the way they were organized to drive innovation.

22. In contrast, diversity of experience—which can arise from ethnic, cultural, socioeconomic, professional, and experiential differences—provides fertile ground for innovation. Research has demonstrated that diverse groups of people consistently outperform more homogeneous groups of high-achievers on problem-solving tasks. We can learn the most from those we have the least in common with.

23. Nearly anything in a person’s environment or past experiences can influence his or her perspective and contribute to viewpoint diversity. Someone who grew up without much

money, for example, approaches a problem fundamentally differently than someone who grew up in a more affluent environment.

24. In one instance, I observed how gender (or the experiences associated with a particular gender identity) can influence the ideas that people bring to the table. A group of colleagues and I had set out to design new pharmaceuticals to treat chronic obstructive pulmonary disease. Different shapes can be deposited in the lungs in different ways, and so we were brainstorming shapes that might prove effective. One group, made up mostly of men, drew analogies to football, boomerangs, ninja stars, and hand grenades. Another group, made up mostly of women, drew analogies to pollen and seeds. The diversity of perspective among members of our group helped us to develop a more robust list of ideas.

25. Because I believe that diversity fosters innovation, I have sought to foster diversity and work with diverse teams both in the tech industry and in academia.

26. That is not to say that ability does not matter. Ability matters, but so does diversity. They are different topics. My teams are talented *and* diverse.

27. Carbon3D states on its website, <http://www.carbon3d.com/about/life-at-carbon>: “Carbon is built on the premise that diversity — of perspectives and disciplines — accelerates innovation. We embody this as a business and as individuals. We strive to put our values to work daily through our interactions with each other and our customers.”

28. I wrote an editorial with Christa Farrell about the importance of diversity in innovation that was published in Science Translational Medicine. See J.M. Desimone, C.L. Farrell, *Driving convergence with human diversity*. Sci. Transl. Med. 6, 238 ed11 (2014). In that article, we noted that a successful scientific endeavor is one that attracts a diversity of experience, draws upon the breadth and depth of that experience, and cultivates those

differences, acknowledging the creativity they spark. We also pointed out that merging the talents, knowledge, perspectives, and experiences of dedicated and varied individuals provides an advantaged framework for problem-solving. We explained that harnessing human diversity effectively therefore can have major implications for the advancement of science and society. I have also discussed the importance of diversity in various speeches and lectures.

29. The DeSimone Lab operates based on the idea that diversity is a fundamental tenet of innovation and this is stated on our website, <http://desimone-group.chem.unc.edu/?cat=10>. We explain that: "With the successes that have come out of the DeSimone Lab, such as supercritical polymerization solvents and PRINT, it is hard to dismiss the notion that diversity has not played a key role at many points in the lab's research achievements."

30. More than half of my Ph.D. graduates have been from underrepresented groups in science and engineering fields. Additionally, of the 55 postdoctoral scholars that have come through my lab, more than 40% have been from underrepresented groups. I also directed UNC-CH's NSF Science and Technology Center for Environmentally Responsible Solvents and Processes (CERSP). In its 10-year existence, more than 170 CERSP-supported students (27%) were African-American.

31. DeSimone Declaration Exhibit 1 contains photographs of me with some of the wonderful students I have worked with at UNC-CH over the years.

32. In 2005, I joined a former mentee to launch a chapter of the National Organization for the Professional Advancement of Black Chemists and Chemical Engineers on UNC-CH's campus.

33. Inclusion is essential to realizing the benefits of diversity. After attending a professional society meeting last spring with female team members and observing an uncomfortable environment (with scantily clad “cheerleaders” at booths) and sexual harassment toward women, I wrote to the society’s leadership to raise my concerns and emphasize the importance of a welcoming culture. I urged the society to adopt a statement of inclusion like that adopted by the American Chemical Society. The American Chemical Society, of which I am a member, has an entire section on its website celebrating our position of inclusion, which reads:

The American Chemical Society believes that to remain the premier chemical organization that promotes innovation and advances the chemical sciences requires the empowerment of a diverse and inclusive community of highly skilled chemical professionals regardless of race, gender, age, religion, ethnicity, nationality, sexual orientation, gender expression, gender identity, presence of disabilities, educational background, and other factors. Chemical scientists rely on the American Chemical Society to promote inclusion and diversity in the discipline.

34. Without being intentional about human diversity and inclusion, we risk detracting from the opportunity that exists to achieve innovation and societal impact.

Diversity Improves The Education at UNC-CH

35. Fostering innovation—the development of new ideas and solutions—is central to the UNC-CH mission. Education must not be a stagnant enterprise. Rather, the classroom can and must become richer year after year as ideas build upon one another.

36. Homogeneity inhibits innovative thinking in the classroom just as it inhibits innovative thinking in the workplace. The last thing you want as a scientist and an educator is a classroom lacking viewpoint diversity.

37. Furthermore, employers want to hire individuals with broad perspectives. The level of diversity among students at UNC-CH plays a powerful role in preparing UNC-CH

students for their professional endeavors. This is especially important for students who have not had much exposure to diverse points of view prior to college.

Conclusion

38. For all of these reasons, diversity is critical to the educational and public service missions of UNC-CH.

I declare under penalty of perjury that the foregoing is true and correct.

Executed on 5/16/17.



Joseph DeSimone

Exhibit 1 to DeSimone Declaration







